Loudoun County
VIRGINIA
WHERE TRADITION MEETS INNOVATION

Transportation Project Development Process

Board of Supervisors 2021 Transportation Summit
June 29, 2021

Transportation Capital Program Milestones

- Development of transportation projects has transitioned from VDOT to localities

- Loudoun County projects have surged in last 10 years
  - The FY 2011 – FY 2016 CIP had approximately $45M for non-transit transportation projects
  - The FY 2021 – FY 2026 CIP has approximately $1.2B for roadway projects

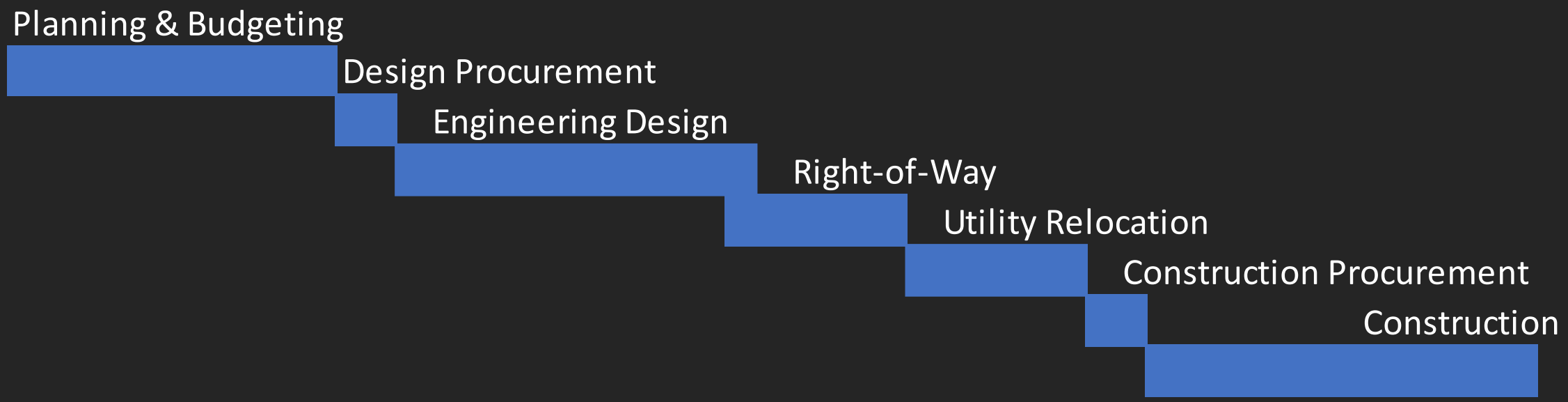
Basis For Transportation Project Development

- The Countywide Transportation Plan (CTP) outlines long-term transportation needs in the County
  - Functional classification
  - Number of lanes and design speed
  - Pedestrian and bicycle facilities

- The Capital Improvement Program (CIP) outlines the financial plan to develop projects

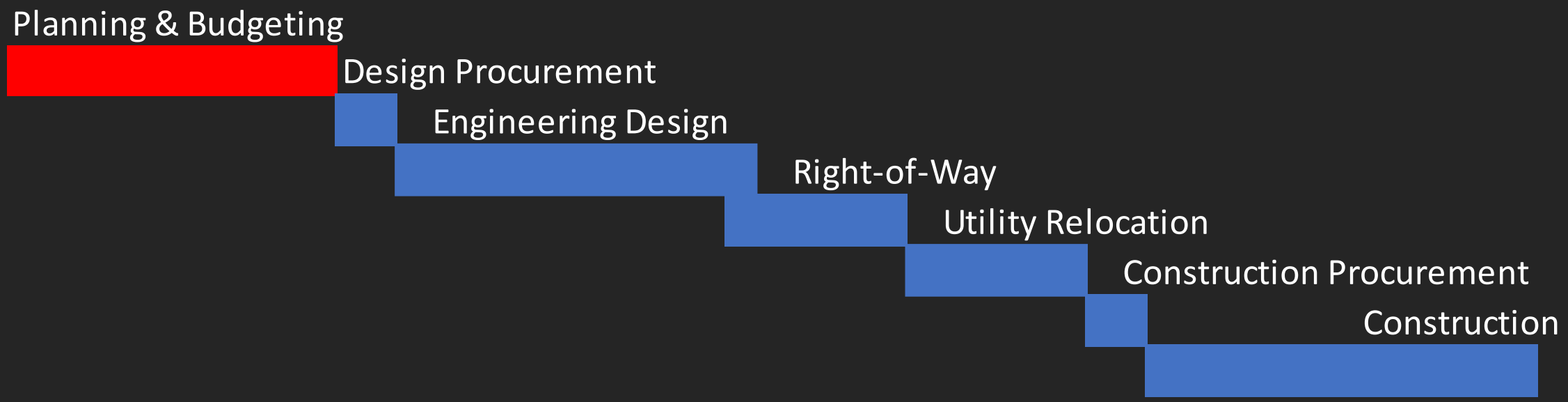
Transportation Development Process

- Seven Primary Steps



Transportation Development Process (continued)

- Planning & Budgeting (6 to 9 months)

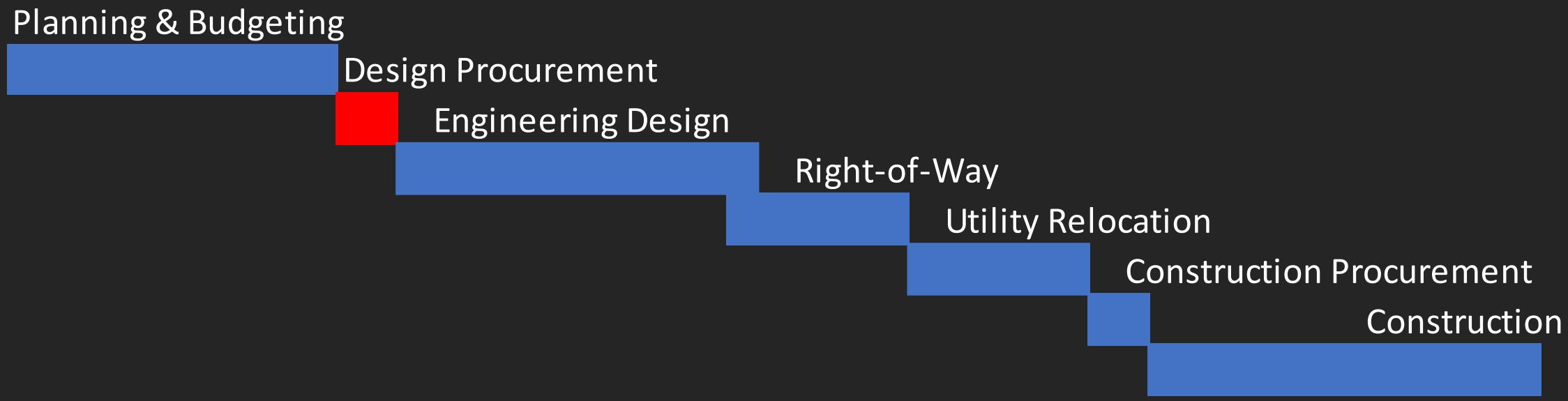


Transportation Development Process (continued)

- Planning & Budgeting
  - Project specific characteristics evaluated
  - Planning level cost estimate and schedule developed
  - Contingency levels selected
  - May conduct 10-15% design for cost evaluation
  - Based on planning level cost estimate and schedule, DTCI works with DFB to program in CIP

Transportation Development Process (continued)

- Design Procurement (1 to 8 months)

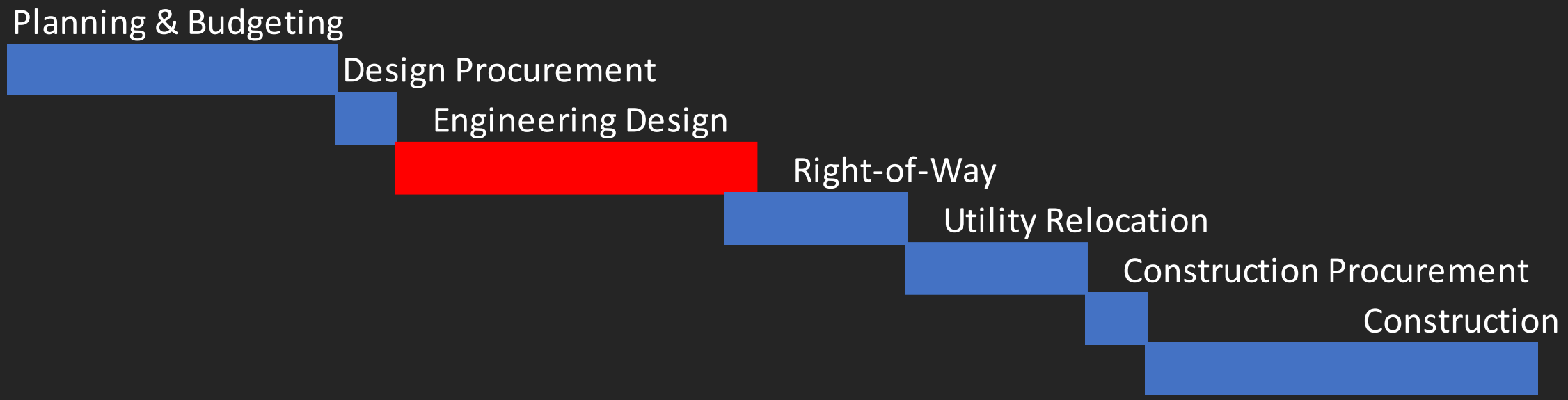


Transportation Development Process (continued)

- Design Procurement
  - Stand alone procurement if value greater than $2.5M
    - Request For Proposal (RFP) advertised
    - Proposal Analysis Group (PAG) reviews proposals and interviews shortlisted firms
    - Process takes six to eight months
  - Can use task order consultant if less than $2.5M
    - Process takes one to three months

Transportation Development Process (continued)

- Engineering Design (12 to 30 months)



Transportation Development Process (continued)

- Engineering Design
  - Initially perform survey, traffic analyses, utility designations, environmental investigations
  - Conceptual design and alignment alternatives
  - 30% design
    - Horizontal alignment
    - Vertical profiles
    - Stormwater treatment and conveyance strategy

Transportation Development Process (continued)

- Engineering Design (continued)
  - Public Information Meeting at 30% design
  - Board endorsement of alignment and major design elements
  - Development of 60% design
    - Refine horizontal alignment and vertical profile
    - Design stormwater conveyance and treatment systems

Transportation Development Process (continued)

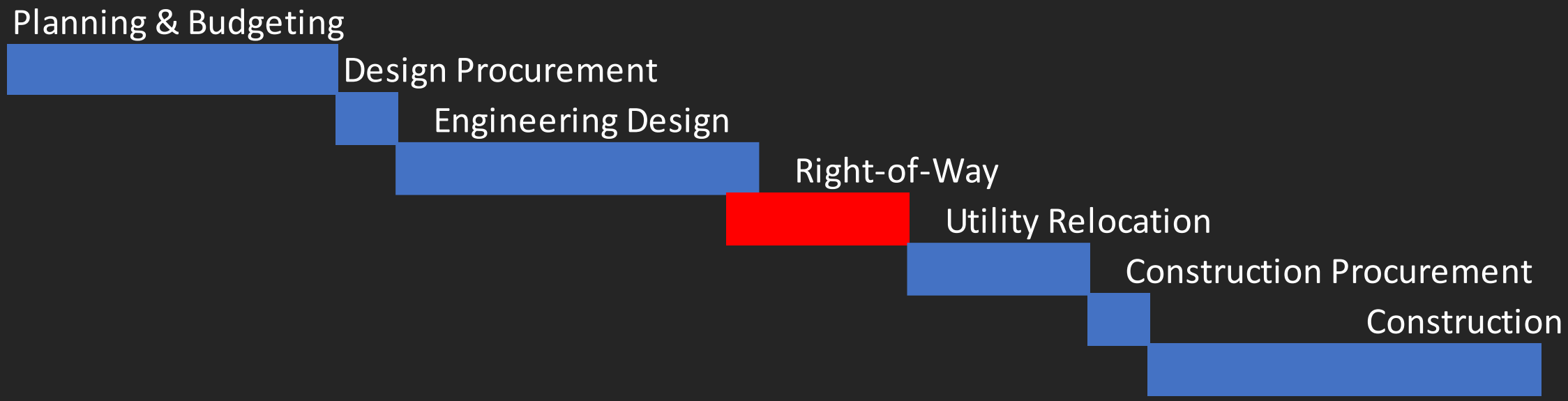
- Engineering Design (continued)
  - Conduct Utility Field Inspection (UFI) meeting
  - Obtain relocation designs, estimated relocation costs, and easement requests from utilities
  - Concurrent with UFI, development of 90% design
    - Finalize geometric and stormwater designs
    - Incorporate ROW dedication and easements
    - Apply for environmental and regulatory permits

Transportation Development Process (continued)

- Engineering Design (continued)
  - Develop plats for ROW acquisition
  - Development of 100% design
    - Construction plans
    - Construction specifications and special provisions
  - Throughout process, plan reviews are performed at milestones by VDOT and Building and Development

Transportation Development Process (continued)

- Right-of-Way (6 to 18 months)



Transportation Development Process (continued)

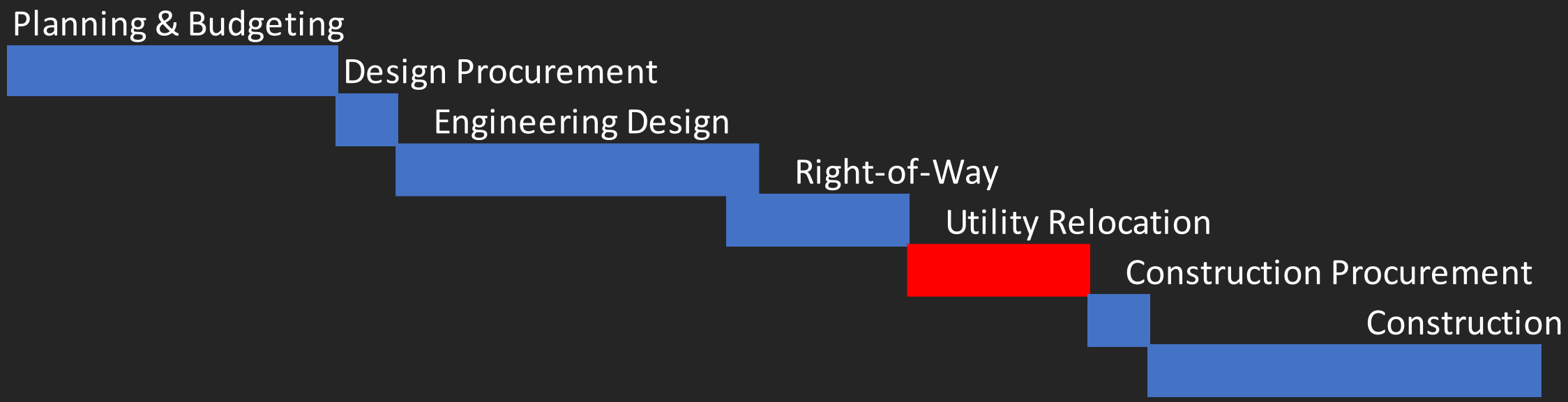
- Right-of-Way Acquisition
  - Legal requirements
    - Strict conformance with Federal Uniform Relocation Act (Uniform Act)
    - Title 25.1 of Code of Virginia – Eminent Domain
    - Title 33.2 of Code of Virginia – Highway And Other Surface Transportation Systems

Transportation Development Process (continued)

- Right-of-Way Acquisition (continued)
  - Process
    - Order title report
    - Conduct appraisal
    - Prepare and deliver offer letter
    - Negotiation period
    - Impasse
    - Condemnation
  - When negotiations are productive - 6-12 month process
  - When condemnation necessary – 12-18 month process

Transportation Development Process (continued)

- Utility Relocation (6 to 15 months)

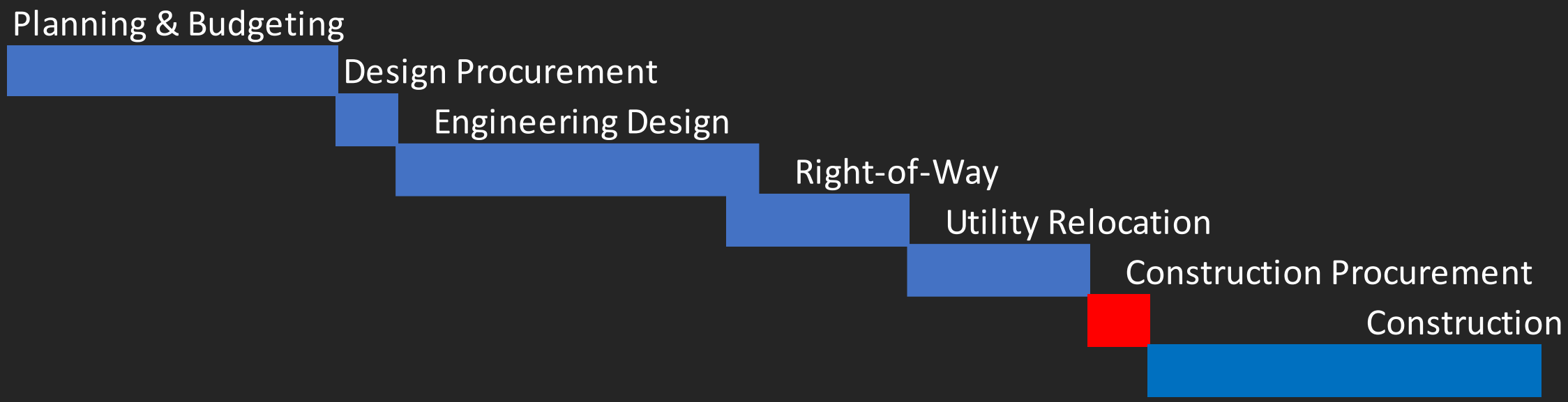


Transportation Development Process (continued)

- Utility Relocation
  - At 60% design, UFI meeting held
  - Utility relocation process after UFI meeting
    - Utilities prepare relocation design plans & estimates
    - If prior rights exist, utilities request easements
  - After ROW and easements acquired, utilities relocated

Transportation Development Process (continued)

- Construction Procurement (3 to 6 months)

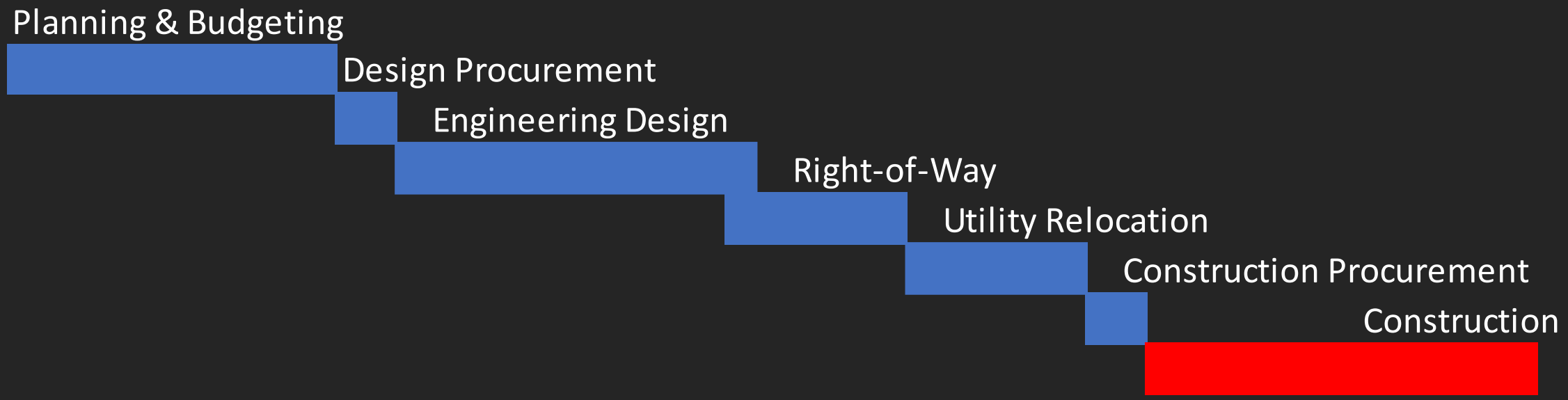


Transportation Development Process (continued)

- Construction Procurement
  - Competitive sealed bidding for projects over $25,000
  - Bids must be both responsive and responsible
  - For contracts over $8M, FGOEDC and then Board approval required
  - Construction Engineering and Inspection (CEI) services procured separately prior to construction

Transportation Development Process (continued)

- Construction (12 to 36 months)



Transportation Development Process (continued)

- Project Construction
  - Kick-off meeting held after contract award
  - Pre-construction submittals must be provided to DTCI within 30 days of contract award
  - Contractor needs to acquire VDOT permit
  - Once submittals and VDOT permit are received, the contractor is issued Notice To Proceed (NTP) that "starts the clock" for contract duration

Transportation Development Process (continued)

- Project Construction (continued)
  - Typical sequence
    - Site preparation
    - Excavation and earthwork operations
    - Subsurface utilities
    - Road subgrade and curb and gutter
    - Asphalt placement
    - Final phase
  - Project closeout and acceptance by VDOT

Transportation Development Issues

- Difference between study and design
  - Study documents convey concepts and ideas
    - Roadway alignments
    - Intersection configurations
    - Trail and Sidewalk corridors
  - Design document translate ideas into detailed drawings and specifications
  - Contractors cannot construct concepts or ideas

Transportation Development Issues (continued)

- Design Stage Impact on Estimated Cost and Schedule
  - At initial concept stage, many unknowns exist
  - As design proceeds, certainty of field conditions and project quantities improves
  - Contingencies used to address uncertainty

Transportation Development Issues (continued)

- Designing In An Environment of Changing Conditions
  - Private development occurring adjacent to transportation projects
  - Utility infrastructure constantly changing
  - Utility designations often required multiple times

Transportation Development Issues (continued)

- Changes In VDOT Intersection Design Philosophy
  - Maximize multimodal mobility
  - Minimize crash risk
  - Integrate corridors that connect regions
  - VDOT placing more emphasis on innovative intersections
    - New signals increase delays on major roads
    - Signals often have more crash risk

Transportation Development Issues (continued)

- Right-of-Way Acquisition
  - Inherent difficulties dealing with properties owned by organizations represented by Boards
    - Homeowner Associations
    - Churches
  - Unresponsiveness of third-party interests
    - Mortgage companies
    - Trustees

Transportation Development Issues (continued)

- Right-of-Way Acquisition (continued)
  - ROW acquisition process improvements
    - Plat process
    - Standardized letter and agreements
    - Expanded use of real property acquisition consultants
    - Condemnation authority requests

Transportation Development Issues (continued)

- Utility Relocation Issues
  - Utility companies not meeting deadlines
  - Delayed mobilization of utility companies
  - New utility installations within project limits without DTCI's knowledge
  - Utility relocation costs significantly over cost estimates

Transportation Development Issues (continued)

- Construction Claims And Disputes
  - Differing site conditions
  - Unusually severe weather conditions
  - Productivity losses
  - Failure to agree on change order pricing
  - Conflicts in plans and specifications

- VDOT Street Acceptance

Transportation Development Issues (continued)

- Design-Build As An Alternate Project Delivery Method
  - Best when project scope is clear
  - Improves design, ROW, and utility coordination
  - Design-Build projects can accelerate project delivery
  - Design-Build procurement
    - Consumes staff resources
    - Constrain future year budgets

Transportation Development Issues (continued)

- Federal Funding And Procurement
  - Requires additional contractual terms and conditions
    - Disadvantaged Business Enterprise (DBE) goals
    - Davis-Bacon wage rates
    - Buy America requirements
  - Must follow National Environmental Policy Act (NEPA)
  - Must follow VDOT procedures and compile documentation

Questions?